



An Introduction to

# Climate Change, Health, and Equity:

A GUIDE FOR LOCAL HEALTH DEPARTMENTS

## About the Guide

Every local health department, or LHD, is different in size, structure, geographic location, community and political context and capacity. There is no one-size-fits-all approach to the integration of climate change into LHD practice. This guide aims to:

- Provide a very basic summary of climate change and climate impacts on health and health equity;
- Connect what we know about climate impacts and climate solutions with the work of LHDs; and
- Offer a few examples of how LHDs can put climate change into public health practice.

## Introduction

Local public health departments across the US are working proactively to address health inequities, an endeavor that requires intentional change in public health practice. While the services that public health provides to individuals in communities remain vitally important, LHDs are broadening their scope.

They are looking to support systems change across the many sectors that shape community environments (such as transportation and land use, agriculture and food and criminal justice systems) and the economic, physical and social conditions in which we live, work, learn and play. LHDs also are beginning to address the historical and structural determinants of health (such as racism, power and disenfranchisement) that have led to and reinforce persistent inequities.

Now, public health needs to apply this expanded scope to climate change—the other key defining health challenge of this century. People and communities around the US are feeling the effects of climate change. Our actions now will determine the magnitude of future impacts, how quickly they occur and the extent to which our communities are able to thrive in the face of climate change and recover in the aftermath of climate-related disasters.

### Health Equity

Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health, such as poverty, discrimination and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments and health care. (Braveman et al. 2017)

### Climate Change

Climate change is any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, wind patterns or other weather-related effects that occur over several decades or longer. (US EPA 2017)

### Climate Vulnerability

Climate vulnerability is the degree to which people or communities are at risk of experiencing the negative impacts of climate change. (USGCRP 2014)

## A Message from the American Public Health Association

The environments in which people live, work, learn and play have a tremendous impact on their health. Certain groups, like children, the elderly, the underserved and communities of color, are less climate-resilient and, therefore, more vulnerable to the negative health effects of climate change.

To quote the great Martin Luther King Jr., “Injustice anywhere is a threat to justice everywhere.” That is especially true in regards to climate change, as no one is unsusceptible to its related health effects. Therefore, we must explore our susceptibilities and pay close attention to our most vulnerable populations to better promote health in a changing climate. By providing resources and assistance to communities that need it most, we can create healthy environments across all places.

This guide follows in that tradition: We believe it will be of great value, as local health departments are an essential part of the preparation and response needed to protect health and advance health equity in a changing climate.

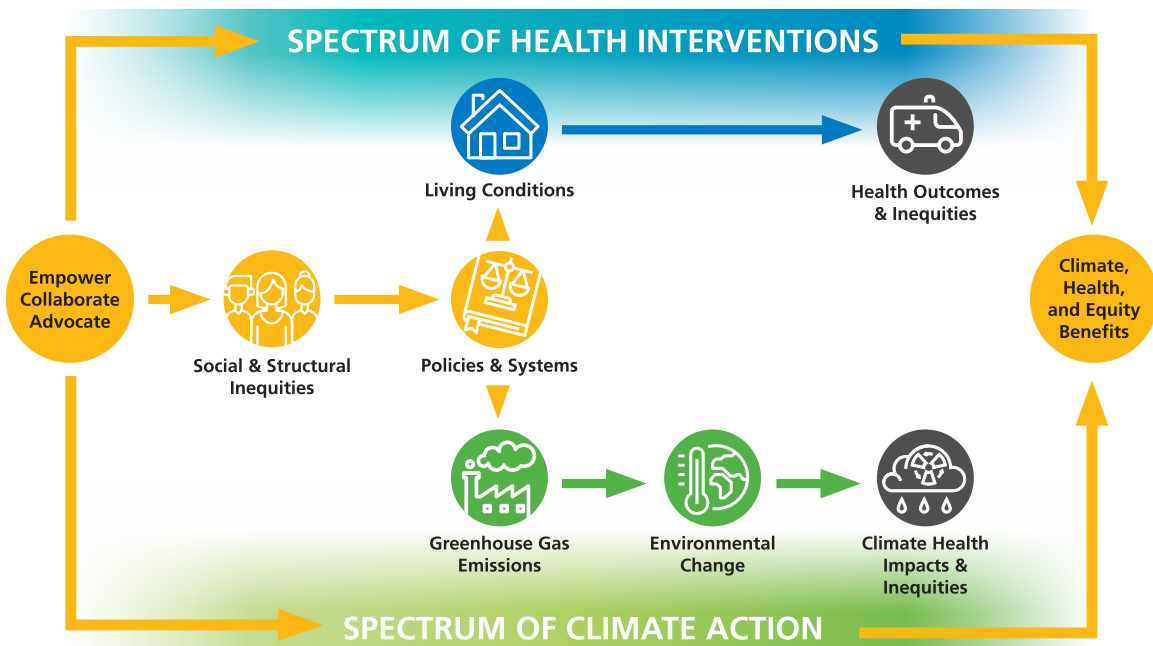
— Georges C. Benjamin, MD, Executive Director

## Fundamentals of Climate And Health Equity

It is hard to overstate the interconnections between climate change, health and equity. The framework below outlines these critical connections.

- **The root causes and upstream drivers of climate change and health inequities are often the same.** Our energy, transportation, land use, building, food and agriculture and socioeconomic systems are key contributors to climate pollution and key shapers of community living conditions. The powerful institutions largely responsible for constructing these systems both influence and are influenced by social inequities, such as class and race.
- **The health risks and impacts of climate change are not equally or fairly distributed across people or communities.** The impacts of climate change on health are significantly moderated by individual and community vulnerability and resilience. Two critical components of climate vulnerability are pre-existing health status and living conditions. In the US, these factors are shaped by forces beyond the control of the individual: economics and the distribution of money; power; social policies; and politics at the global, national, state and local levels. (CSDH 2008) They differ by place, race and income as a result of factors such as inequities in the distribution of money and power, historical disinvestment in some communities, discriminatory practices and policies over time, structural racism, higher pollution burdens and poor access to resources for health. The result is that low-income communities and communities of color are disproportionately affected by the health impacts of climate change.
- **Climate change exacerbates existing health and social inequities.** Climate change itself worsens environmental conditions (e.g. ozone pollution) associated with chronic illness and injury and causes social and economic dislocations that most impact disadvantaged communities.
- **Interventions that act on upstream shared systemic causes can most effectively address both climate change and health inequities.** Interventions to address both climate change and health inequities occur along a spectrum ranging from upstream structural, policies and systems changes to downstream treatment, rehabilitation and disaster recovery efforts. Interventions all along both spectrums are required to protect and promote health in the era of climate change. More upstream solutions have the greatest benefits for human health and the environment, providing primary prevention and promoting healthy, equitable, sustainable and resilient communities. (Rudolph and Gould 2014)
- **Building political and economic power and voice are essential components of climate resilience.** Especially for historically disenfranchised low-income communities and communities of color, power imbalances have allowed the creation and perpetuation of unhealthy living conditions associated with health inequities and climate vulnerability. The lack of power and voice also constrains the ability of communities to respond to climate change impacts and contribute local knowledge to climate solutions. Building community power is required to transform systems in ways that foster health and reduce greenhouse gas emissions.

**Figure 1:** Climate Change, Health and Equity: A Framework for Action



## Race, Ethnicity and Climate Change

### African Americans

African American communities have lower income, less education and poorer health status than non-Hispanic white communities overall. This is largely due to historical discriminatory practices in housing, education, employment and healthcare. (Adler 2007) These inequities contribute to greater vulnerability to climate impacts.

- Going as far back as the 1600s, slavery of African and African American people is a precursor to more recent discriminatory policies and current-day inequities due to the social, political and economic divide it caused between African American and white populations. (Roeder 2017)
- African Americans are more likely to live in neighborhoods with few trees and more heat-trapping pavement. The rate of heat-related deaths of African Americans is 150 to 200 percent greater than that for non-Hispanic whites. (Morello-Frosch et al. 2009)
- African Americans have a 36 percent higher rate of asthma incidents and are three times more likely to die or visit the emergency room from asthma-related complication than non-Hispanic whites. (Morello-Frosch et al. 2009)
- One out of five African American families lives in poverty, compared to one out of 15 white families. During an extreme weather event, these households have a smaller cushion against property damage or injuries, further complicated by lack of access to medical care and insurance. (Hoerner and Robinson 2008)

### Native Americans and Alaska Natives

Historical policies, such as colonization and genocide, the Indian Removal Act of 1830 and residential Schools for Native American Children have led to present-day social and health inequities in Native American and Alaska Native, or NA/AN, communities. These include loss of traditional lifestyles, persistent poverty, substandard health services and lack of access to electricity, running water and communication technologies. (USGCRP 2016, Morello-Frosch et al. 2009)

- Traditional NA/AN diets and subsistence hunting and fishing are at risk due to climate change. (USGCRP 2016, Morello-Frosch et al. 2009)
- NA/AN communities lack access to clean, potable drinking water at higher rates than others. Warmer water temperatures may exacerbate already high rates of diarrhea-associated hospitalizations for NA/AN children. (USGCRP 2016, Singleton et al. 2007)

### Hispanics/Latinos

Hispanic/Latino communities have lower income, less education and poorer health status than non-Hispanic white communities overall. This is largely due to historical discriminatory practices in housing, education, employment and healthcare. (Morello-Frosch et al. 2009)

- Nearly one in two Latinos live in counties with poor air quality. Latino children are twice as likely to die from asthma as non-Latino whites, and Latino children living in areas with high levels of air pollution have a heightened risk of developing type 2 diabetes. (Quintero et al. 2011, Alderete et al 2017)
- Over 1.8 million Latinos live within a half-mile radius of oil and gas development. (Alderete et al 2017)

### Native Hawaiians and Pacific Islanders

Historical practices such as colonization and trade, the aggregation of census and health data and a history of military testing have led to present-day social and health inequities that increase climate-related health risks in Native Hawaiian and Pacific Islander communities. (Morello-Frosch et al. 2009)

- Scientists project that, by 2100, Hawaii and some Pacific islands will experience about one- to two-and-a-half-foot higher sea-level rise when compared to global averages. (Eversole and Andrews 2014)
- Research has shown that a higher proportion of Pacific Islanders in the US live in counties with a pollution exceeding the federal air quality standards when compared with Asians and other racial groups. (Morey 2014)
  - Native Hawaiian and Pacific Island communities experience high rates of asthma (Galinsky et al. 2017), expected to worsen as climate change worsens air quality.

Humans need clean air, clean water, safe shelter, healthy food and a stable climate for survival. We cannot have healthy people without healthy places, on a healthy planet. Public health professionals must join our efforts to achieve health equity with the global fight for environmental and climate justice. The time for action is now—our health is at stake.

*Linda Rudolph, director, Center for Climate Change and Health, Public Health Institute*

## Contents of the Guide

This guide is divided into nine sections:

**Health Equity and Climate Change** – It is hard to overstate the interconnections between climate change, health and equity. The Framework for Action in this section outlines these critical connections.

**Climate Change 101** – Climate scientists have supplied a wealth of evidence about what is happening to the earth’s climate and what it means for our local environments.

**Health Impacts of Climate Change** – Predominant climate change impacts influencing health include extreme heat, drought, wildfires, air quality, allergens, sea level rise, storms and flooding and nutrition and food security.

**Getting Started** – This section identifies opportunities and entry points to begin integrating climate change in local health departments.

**Climate Change and Health Benefits** – Action to address climate change has the potential for huge health benefits; conscious consideration of the health and equity impacts of various options for addressing climate change can help optimize the health benefits of climate action.

**Public Health Programs and Climate Change** – This section identifies opportunities to integrate climate change and health into the following programs: Maternal, Child, Adolescent & Family Health; Clinical Services; Infectious Disease/Communicable Disease Control; Environmental Health; Chronic Disease and Injury Prevention and Control; and Public Health Emergency Preparedness.

**Public Health Roles and Functions** – Local health departments are already engaged in surveillance and community health assessments, community engagement and intersectoral collaboration. The data, skills and practices used in these activities can be applied to integrate climate change into public health practice.

**Climate and Health Communications** – Local health departments provide information to the public and policymakers about health risks and recommend strategies to promote health. Climate and health messages can be integrated into routine alerts, and into more targeted efforts to increase support for climate and health action.

**Vignettes** – Narratives showcase success stories on climate change and health equity from local health departments in Denver, Colorado; Los Angeles, California; Maricopa County, Arizona; Minneapolis, Minnesota; Multnomah County, Oregon; New Orleans, Louisiana; Philadelphia, Pennsylvania; San Francisco, California; and Seattle-King County, Washington.



The American Public Health Association champions the health of all people and all communities. We strengthen the public health profession. We speak out for public health issues and policies backed by science. We are the only organization that influences federal policy, has a nearly 150-year perspective and brings together members from all fields of public health. APHA publishes the American Journal of Public Health and The Nation’s Health newspaper. At our Annual Meeting & Expo, thousands of people share the latest public health research. We lead public awareness campaigns, such as Get Ready and National Public Health Week. Together, we are creating the healthiest nation in one generation. Learn more at [www.apha.org](http://www.apha.org).



An Introduction to

# Climate Change, Health, and Equity:

A GUIDE FOR LOCAL HEALTH DEPARTMENTS

## References

- U.S. Environmental Protection Agency (2017). Climate Change: Basic Information. Accessed from: [https://19january2017snapshot.epa.gov/climatechange/climate-change-basic-information\\_.html](https://19january2017snapshot.epa.gov/climatechange/climate-change-basic-information_.html).
- Braveman P, Akin E, Orleans T, Proctor D, and Plough A (2017). What Is Health Equity? And What Difference Does a Definition Make? Princeton, NJ: Robert Wood Johnson Foundation.
- US Global Change Research Project (2014). Vulnerability definition. Accessed from: <http://www.globalchange.gov/climate-change/glossary#top>.
- Commission on Social Determinants of Health (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. Geneva, World Health Organization. Accessed from: [http://www.who.int/social\\_determinants/thecommission/finalreport/en/](http://www.who.int/social_determinants/thecommission/finalreport/en/).
- Rudolph L, and Gould S (2014). Why we need climate, health, and equity in all policies. Commentary, Institute of Medicine, Washington, DC. Accessed from: [www.iom.edu/climatehealthcommentary](http://www.iom.edu/climatehealthcommentary).
- Adler NE (2007). Reaching for a Healthier Life: Facts on Socioeconomic Status and Health in the U.S. The John D. and Catherine T. MacArthur Foundation Research Network on Socioeconomic Status and Health. Accessed from: [http://www.macses.ucsf.edu/downloads/reaching\\_for\\_a\\_healthier\\_life.pdf](http://www.macses.ucsf.edu/downloads/reaching_for_a_healthier_life.pdf).
- Roeder A (2017). Understanding Slavery's Legacy in Health and Medicine. Harvard T.H. Chan School of Public Health. Accessed from: <https://www.hsph.harvard.edu/news/features/understanding-slavery-legacy-in-health-medicine/>.
- Morello-Frosch R, Pastor M, Sadd J, and Shonkoff S (2009). The Climate Gap: Inequalities in How Climate Change Hurts Americans & How to Close the Gap. Accessed from: [http://dornsife.usc.edu/assets/sites/242/docs/ClimateGapReport\\_full\\_report\\_web.pdf](http://dornsife.usc.edu/assets/sites/242/docs/ClimateGapReport_full_report_web.pdf).
- Hoerner JA and Robinson N (2008). A Climate of Change: African Americans, Global Warming, and a Just Climate Policy for the US. Oakland: The Environmental Justice and Climate Change Initiative. Accessed from: <http://urbanhabitat.org/files/climateofchange.pdf>.
- U.S. Global Change Research Program (2016). The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. Accessed from: <https://health2016.globalchange.gov/>.
- Singleton, RJ Holman RC, Yorita KL, Holve S, Paisano EL, Steiner CA, Glass RI, and Cheek JE (2007). Diarrhea-Associated Hospitalizations and Outpatient Visits Among American Indian and Alaska Native Children Younger Than Five Years of Age, 2000–2004. *The Pediatric Infectious Disease Journal*. doi:10.1097/INF.0b013e3181256595.
- Quintero A, Jaffee V, Madrid J, Ramirez E, and Delgado A (2011). US Latinos and Air Pollution: A Call to Action. Natural Resources Defense Council. Accessed from: <http://webdev.csu.edu/cerc/researchreports/documents/U.S.LatinosandAirPollution-ACalltoAction2011.pdf>.
- Alderete TL, Habre R, Toledo-Corral CM, Berhane K, Chen Z, Lurmann FW, Weigensberg MJ, Goran MI, and Gilliland FD (2017). Longitudinal Associations Between Ambient Air Pollution with Insulin Sensitivity,  $\beta$ -Cell Function, and Adiposity in Los Angeles Latino Children. *Diabetes*, db161416.
- Eversole D and Andrews A (2014). Climate Change Impacts in Hawai'i: A Summary of Climate Change and Its Impacts to Hawai'i's Ecosystems and Communities. *University of Hawai'i at Mānoa Sea Grant College Program, Honolulu, HI*. Accessed from: <http://seagrant.soest.hawaii.edu/sites/default/files/publications/smfinal-hawaiiclimatechange.pdf>
- Morey BN (2014). Environmental Justice for Native Hawaiians and Pacific Islanders in Los Angeles County. *Environmental Justice*, <https://doi.org/10.1089/env.2014.0003>.
- Galinsky AM, Zelaya CE, Simile C, and Barnes PM (2017). Health conditions and behaviors of Native Hawaiian and Pacific Islander persons in the United States, 2014. *National Center for Health Statistics. Vital Health Stat 3(40)*.